

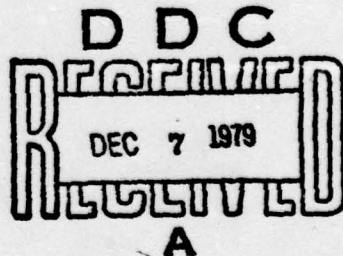
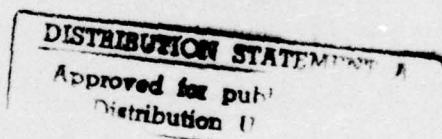
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# **RESEARCH ON MILITARY SELECTION AND CLASSIFICATION IN IRAN**



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## **Behavior and Systems Research Laboratory**

December 1971

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**BEHAVIOR AND SYSTEMS RESEARCH LABORATORY**  
**An activity of the Chief, Research and Development**

**J. E. UHLANER**  
Director

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IN IRAN.

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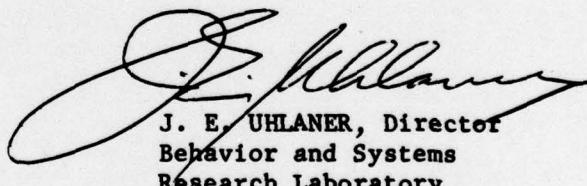
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## FOREWORD

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BESRL's COMBAT PERFORMANCE Work Unit has had as one of its responsibilities the development of generalized methods for instituting military selection and classification systems in selected developing countries. The effort is typified by aid furnished, at the request of the Advanced Research Projects Agency of the Department of Defense (ARPA), to the Imperial Iranian Army in developing a personnel system and at the same time identifying methods and techniques generalizable to other countries desiring to institute comparable systems. The present Research Study summarizes the research accomplished from 1967 through September 1969, and constitutes the final report on the Sub-Work Unit, "Research on military selection and classification for developing cultures."

The entire Work Unit is responsive to objectives of RDT&E Project 2Q062106A722, Selection and Behavioral Evaluation, FY 1972 Work Program.



J. E. UHLANER, Director  
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## RESEARCH ON MILITARY SELECTION AND CLASSIFICATION IN IRAN

### BRIEF

#### Requirement:

To develop personnel selection and classification procedures for the Imperial Iranian Army and at the same time develop guidelines generalizable to other developing countries desiring to institute comparable procedures.

*are being developed*

#### Procedure:

In January 1967, at the request of the Advanced Research Projects Agency (ARPA), BESRL provided plans for the research and began consultations with experts of the recently organized Imperial Iranian Armed Forces Personnel Research Division (PRD). BESRL research scientists visited Iran in 1967 to survey needs and frame a general research plan. The American Institutes for Research, under contract to the U. S. Army, provided technical research support and direction to IIA personnel. Test development was conducted by the PRD staff under direction of the AIR technical advisor. BESRL provided general supervision and coordination of the research effort and directed the development of classification techniques for utilization of conscripts, selection of IIA career specialists, and selection and assignment of IIA officers. The AIR contract in Iran was completed in June 1969. The overall effort was terminated by ARPA in September 1969, six months earlier than scheduled.

#### Accomplishments:

Four test batteries were developed for use of the IIA in selection and classification: the Ordinary Conscript Battery for illiterates, the Ordinary Conscript Battery for Literates, tests for the selection and classification of NCOs, and selection tests for Military Academy cadets. The batteries for conscripts (and NCOs) demonstrated utility in identifying individuals who were likely to be ineffective in military service. The tests were less effective as a basis for differential classification for MOS assignment, partly because of the generally undifferentiated work background of the conscripts and partly because the requirements for IIA jobs were not clearly established.

The research capability of the IIA PRD was developed through re-allocation of testing responsibilities between PRD and field services, the institution of efficient administrative procedures, and--most important--through advanced educational training and guidance through the essential phases of personnel measurement research.

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## **RESEARCH ON MILITARY SELECTION AND CLASSIFICATION IN IRAN**

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## RESEARCH ON MILITARY SELECTION AND CLASSIFICATION IN IRAN

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### INTRODUCTION

The Culture Fair Testing Sub-Work Unit was established to develop methods and techniques for instituting selection and classification systems in the armed forces of friendly developing nations. Under the sponsorship of the Advanced Research Projects Agency (ARPA), Department of Defense, the initial effort to develop such a capability was undertaken in the Imperial Iranian Army (IIA).

Iran was considered a promising laboratory for the research. The Shah, as Commander in Chief of the armed forces, is committed to a program of rapid development, not only in terms of the acquisition of modern weapons and equipment, but also in the logistical, support, and personnel systems necessary for the weapons and equipment to be adequately deployed and maintained. Such systems must be staffed with qualified individuals selected by objective methods.

Iran is a land of marked heterogeneity of topography and climate, ethnic groupings and languages, education, occupations, and wealth. Thus the general problems of constructing tests which can be used to staff military systems in Iran are the same as in most other developing nations--low levels of literacy, a multiplicity of languages, limited experience with technological innovations, and so forth.

### IRAN--THE SETTING

The major topographical features of Iran are the Central Plateau bounded by a ring of mountains on all four sides, creating wide ranges of precipitation and temperature. Annual rainfall is about 50 inches in the mountains of the west, with heaviest concentrations from December to March, while in the desert of the Central Plateau less than two inches of rain fall each year. Temperatures vary from -18F degrees in the mountains to +132F degrees in parts of the desert.<sup>1</sup>

Although the majority of the population (1970 estimate--28 million or 66 percent) is Indo-European or Persian Farsi-speaking, there are also a large number of other ethnic groups: five Turkic groups account for 25% of the population; Kurds, 7%, and Semitic Arabs, 4%. Because of the inhospitable terrain and climate, 70% of the population lives on 30% of the land area. Ethnic and linguistic diversity is in some measure ameliorated by the fact that more than 90% of the people embrace the constitutional state religion, Shiah Islam.

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<sup>1</sup> Statistical information from US Army Area Handbook for Iran, 1971, DA Pamphlet 550-68.

Iranians engage in diverse economic activities, from nomadic sheep and cattle herding to manufacturing and technology; yet over 50% of the work force is employed in agriculture-related fields, 20% in industry--and 70% of those in industry are in the more traditional types of "cottage industry" such as carpet weaving, metalwork, or the like.

Although primary school education is free and compulsory for children between 6 and 11 years, in 1970 about 72% of the people were illiterate, the majority of these in the rural areas. Yet the student population on all levels is nearly 3½ million, with about 40 thousand of these in higher education in the country's eight universities. Rural schooling remains substandard, depending in many cases upon the use of conscripts with high school education as teachers. Such disparity in the quality of education from city to countryside complicates the construction of tests for a certain level.

Under the impetus of development programs for economic diversification and expansion, the Iranian economy achieved a growth rate of 12% at the end of 1970. Industrial development is most marked, with a shift away from small family-owned and -operated industries toward larger corporate establishments. The major difficulty in developing industry in Iran is the problem of capital formation. This problem is being met through a mixed program of private and public participation. Annual per capita income has risen from \$195 in 1967 to \$260 in 1969; yet one must keep in mind the great disparity between the great numbers at the bottom of the wage ladder and the relative few at its top.

Petroleum accounted for over 90% of the country's foreign exchange earnings in fiscal year 1968. Among non-petroleum exports the traditional items--cotton, handmade carpets, fresh and dried fruits, and hides and leather--still headed the list. Principal import items are machinery, implements, and spare parts necessary for the improvement of the economic infra-structure. Importation of consumer and luxury items is restricted by stringent tariff and credit laws.

#### IRAN--THE ARMED FORCES

The Iranian armed forces compare favorably in strength with those of neighboring countries with the exception of Turkey and the Soviet Union. The Imperial Iranian Army (IIA), totaling slightly more than 200,000 men in 1970, is composed of the Ground Forces (175,000), the Air Force (15,000), and the Navy (12,000). The 60,000-man Gendarmerie and the national police, two para-military forces, serve under the interior ministry. The defense budget in 1970 comprised 14% of the total national budget. Equipment includes domestically produced small arms and ammunition, as well as advanced armor, antiaircraft weapons, and other materiel supplied by the United States, Great Britain, the Soviet Union, and others.

The Iranian armed forces, like the armed forces of other developing countries, play a major role in at least three primary functions--external security, internal security, and domestic development.

Iran's armed forces are intended to serve a purely defensive function. In recent years the armed forces have been mobilized during border disputes with the Soviet Union and Iraq. All attempts are made to maintain friendly relations with both the United States and the Soviet Union. As a member of the Central Treaty Organization (CENTO), Iran has in the past engaged in common military planning and training exercises with Turkey, Great Britain, and the United States; with the gradual relaxation of cold war tensions, this involvement is undergoing transformation from a purely military to more of a mutual economic assistance nature. Iran's relations with immediate neighbors--Turkey, Pakistan, India, Afghanistan--are amicable.

The armed forces have actively engaged in a number of specific developmental projects. Because of their ability for rapid concentration of manpower and material resources, the armed forces are able to deal with specific problems faster and more completely than are most civilian agencies. In addition, the armed forces usually provide an assured and highly respected channel for individual status improvement.

In Iran, a number of revolutionary corps have been organized for work in such areas as literacy improvement, farming, legal aid, public health, and works projects. A number of specialized training centers have been organized to provide vocational training to conscripts during the last three months of their service tours, to enable them to fill some priority function when they reenter civilian life. Training is provided in such critical occupations as carpentry, welding, plumbing, masonry, auto mechanics, and electricity. In addition, army regulations stipulate that a conscript must learn minimum reading and writing skills before the termination of his service.

Under the present conscription system only one out of every four eligible men is actually inducted for his two-year term. Exemptions are given to those with dependents, the physically or mentally unfit, and students while they are enrolled either at home or abroad. Enlistment, for a period of 11 years, is restricted to those with at least 9 years of education.

#### SCOPE OF THE PROJECT

It was in this general framework of conditions that the BESRL work in Iran was to be conducted, with the dual aim of satisfying the specific selection and classification needs of the IIA and at the same time isolating a methodology which could be generalized for use in other developing nations. BESRL's entry into such effort was not without precedent. Research on selection and classification methods for the Republic of Korea Army (ROKA) between 1962 and 1964 had alerted BESRL to the basic fact that tests developed in a technologically advanced society like the United States are not effective in another culture when merely translated from one language to the other.

The genesis of the project came during the period from March to August 1962, when a United States Army Adjutant General's Corps Mobile Training Team conducted a reportorial survey of the IIA. The MTT Report stressed the importance of developing an effective selection and classification testing program in the IIA and made a number of specific observations in that area:

1. The educational level and civilian skills possessed by incoming accessions below the officer level are extremely low. The Imperial Iranian armed forces must train most of the military specialists and technicians they require. Trainable personnel possessing special talents and aptitudes must be identified prior to selection for intensive training.
2. At present, there are no military personnel with appropriate training and background to institute and supervise a mental testing program within the IIA.
3. No organizational element, department, or staff agency exists within the IIA to supervise, direct, and regulate an armed forces aptitude testing program.

The report recommended 1) that top command support be given the establishment of an effective aptitude and qualification testing program in the IIA, 2) that a number of IIA officers be selected for specialized training as psychometrists, 3) that a testing profile be established for each Military Occupational Specialty, and 4) that the U. S. Army Mission/Military Assistance Advisory Group (ARMISH/MAAG) secure the assignment of a specialist to assist in the instruction of indigenous personnel, the design and application of tests, and the identification of military requirements of a testing program.

The impact of the MTT report was immediate. A Personnel Research Division (PRD) was created within the IIA and staffed at the Supreme Commanders Staff (SCS) level; operations organizations were created in each of the separate forces, but MOS evaluation was initiated only in the Air Force. IIA officers were assigned both to exchange and in-country training programs. Approximately 100 paper-and-pencil tests were constructed to measure general abilities, aptitude areas, job proficiency, and personality traits.

BESRL's involvement actually began in January 1967 at the request of the Advanced Research Projects Agency (ARPA). The objectives, work statements, and basic plan prepared by BESRL on 20 March 1967 were approved by ARPA as the basis for conducting the project. A review was made of background information available in the United States, and consultations were held with Iranian experts for general planning purposes. A 16-month contract with the American Institutes for Research (AIR) provided technical advisement and psychometric research and development support to the IIA Personnel Research Division. The Chief of the Division, Colonel Morteza Danesteh, visited the United States in June 1967 to exchange information with BESRL and AIR representatives on plans and resources for the research project. Seven specific research tasks were formulated:

Task 1. Identification of major selection and classification needs and problems of the IIA as perceived by the IIA and ARMISH/MAAG.

Task 2. Reorganization of the Personnel Research Division and development of its capabilities to support the BESRL/AIR research effort and to conduct test development and validation and personnel management research after the withdrawal of technical advisement.

Tasks 3 and 4. The development and validation of selection and classification test batteries for three designated priority groups--illiterate conscript, career NCO, and military academy cadet. Task 4 involved the development of performance criteria in key IIA training programs and MOS which could be used for evaluation of tests constructed in Task 3.

Task 5. On the assumption that selection tests would have limited value unless provisions were made to improve the military potential and performance of illiterate conscripts, this task was concerned with an experimental vocational-literacy training program to be run in conjunction with usual basic and MOS training.

Tasks 6 and 7. Matching qualitative military manpower requirements with the country's available resources, taking into consideration modernization plans for the IIA and the necessary increase in requirements for technologically skilled personnel in all services. Task 6 was concerned with the application of tests developed in Task 3 to analyze the resources of skills and aptitudes in the military input population and in the full mobilization population. Task 7 concerned the efficient utilization of research products (tests and parameters) within a model selection/classification system.

The overall research effort was monitored by the ARPA Research and Development Field Office (Middle East) in Beirut, Lebanon. The work was conducted in coordination and consultation with the Research and Development Division (J-8) and the Personnel Division (J-1) of ARMISH/MAAG in Iran.

As part of Task 1 in the work program, Dr. William H. Helme and Mr. Isaak Orleans of BESRL and Mr. Daryl G. Nichols of AIR visited Iran from July to August 1967. In addition to developing specifics of the general research plan in coordination with IIA and ARMISH/MAAG, the team made a survey of personnel measurement instruments then in use by the PRD and found that the tests had not been standardized nor subjected to validity analysis. Of the 92 tests which had been developed, only 13 could be applied fairly to the "noneducated" conscript population. This fact, combined with the intention of the IIA to switch from a lottery to a selection draft system in March 1968, meant that first priority in the test development task was assigned to the construction and validation of a selection battery for conscripts (Task 3).

A problem which required immediate attention was the reorganization of the Personnel Research Division to enable it to support the BESRL/AIR research and ultimately to plan and carry out its own research and development projects after the withdrawal of technical advisement (Task 2). A BESRL proposal for the reorganization of the Division was submitted to ARMISH/MAAG on 11 September for implementation by the Supreme Commander's Staff of the IIA.

The subsequent research effort on Tasks 2, 3, and 4 was directed by Dr. Erich P. Prien, the AIR contract scientist assigned as technical adviser to the PRD from September 1967 through June 1969. Actual on-site work was initiated early in October 1967. A long-range plan specifying projects to be conducted concurrently in Tasks 2, 3, and 4 was prepared, giving estimated target dates for completion. No work was undertaken in Task 5, which was concerned with improving the military potential of illiterate conscripts. This task was subsequently dropped by ARPA in a reduction of costs and extent of the overall effort. The difficulties involved in developing a satisfactory vocational-literacy training program for illiterate conscripts and the limited capability of the PRD to conduct such a program in conjunction with the test development effort contributed to the decision.

Concurrent with work on Tasks 2, 3, and 4, a support research program was initiated to accumulate information describing the manpower resources available to the military and the military output (Tasks 6 and 7). The final goal was to insure an equitable distribution of qualified personnel within the total military personnel system. It was recognized that accomplishment of this objective would require improvement of the IIA personnel accounting system and the accumulation of both input capability and in-service performance data over an extended period of time.

Research in all tasks was conducted by the staff of the Personnel Research Division under the direction of the resident Technical Adviser. In the latter phase of the program, Dr. Leo J. Kotula of BESRL made two extensive visits to provide general supervision and direction in the overall work program as originally planned. In addition to general coordination of the research effort, he directed specific projects in the areas of classification techniques for career enlisted specialties in the IIA and in developing techniques for officer selection, procurement, and assignment.

The AIR contract in Iran was completed in June 1969, and a comprehensive report on all activities was submitted to BESRL by Dr. Erich Prien in July 1969. The overall effort was terminated by ARPA in September 1969, 6 months earlier than originally planned.

#### DEVELOPMENT OF SELECTION PROCEDURES

On the basis of the preliminary survey conducted by BESRL and AIR representatives in July and August 1967 and consultations with the IIA and ARMISH/MAAG, research priorities were assigned to the development of selection procedures and test batteries for conscripts, career NCOs, and cadets in the military academy.

## SELECTION OF ILLITERATE ORDINARY CONSCRIPTS

Although the IIA conscript system provided sufficient gross numbers of men to the armed forces, it did not provide for selection of the most qualified inductees nor did it classify conscripts for assignment to specialty areas. Consequently, it did not address basic MOS skill requirements. So far as could be determined, percentage of skill in the combat arms, electronics, general technical, and communications areas ranged between 40 and 60 percent fill; motor maintenance, clerical, and graphic specialties showed about 75 percent fill, while only two areas--precision maintenance and military crafts--showed an excess of fill over requirements.

The vast majority of the conscripts were assigned to the Ground Forces, while the Navy and Air Force depended upon enlistments to fill the higher skill areas. Enlistees were required to have a minimum of 9 years of education. The modernization and expansion of the armed forces, however, was expected to put considerable strain on the available manpower resources unless provisions were made to select, classify, train, and utilize both semi-literate and illiterate conscripts in some of the MOS areas.

Conscripts were virtually unscreened except on medical grounds. The Gendarmerie collected all men of military age (19) who were not exempted or deferred, and selected the required quota by lottery. Those who were inducted were given basic combat training but no substantive MOS training, except for those with 9 to 11 years of education who were assigned to some specialist training programs.

Test Battery for Ordinary Conscripts. The immediate research problem was to develop selection and classification procedures for operational use by March 1968 when the lottery system was to be replaced by universal conscription with selective retention of the best qualified for their full two-year tour. Some preliminary work had been done by the PRD beginning in 1967, patterned largely on the U. S. Army system of screening on a general ability measure. A direct adaptation of U. S. Army tests, however, was not feasible because of the low literacy level of conscripts and their limited background for response to the technological content upon which the tests were based.

An appropriate starting point for the development of "culture fair" instruments for use in Iran was provided by the work of AIR under the U. S. Agency for International Development (USAID) contract in test construction and development for the West African Examinations Council in Lagos, Nigeria. This work resulted in the construction of the International Division (ID) Test Battery, which had demonstrated utility with subjects of limited educational attainment, and the formulation of a set of general methodological principles regarding test construction and administration in developing nations.

Following planning conferences with the staff of the PRD in October 1967, the decision was made to construct a test battery suitable for group administration, which would measure a broad spectrum of situation-relevant aptitudes for purposes of initial selection and with potential subsequent utility for branch or occupational area classification. Considerable reliance was placed on the tests previously developed by the PRD, and the ID Test Battery was used as a general model for the construction of seven experimental tests to make up the original Ordinary Conscript Battery (OCB):

1. Oral Comprehension Test. A general information test designed to measure understanding of simple commands and concept formation. Item content was selected from the ID Similarities Test and from available IIA Tests.
2. Figure Similarities Test. Designed to measure visual acuity through the detection of differences in simple forms. The ID Checking Test was used in its entirety without revision.
3. Figure Completion Test. Designed to measure spatial relations ability. Two figures are presented: a complete figure and an incomplete figure. Subjects are instructed to identify the missing parts. This test was developed by the PRD from an adaptation of an American test used by the Iranian Oil Company.
4. Tool Relations Test. Designed to measure familiarity with typical Iranian tools and mechanical devices. Item content was selected from a test developed by the PRD and from the ID Similarities Test.
5. Matches Test. A test developed by the PRD to provide an index of general intelligence based on perception of similarities and differences.
6. Manual Dexterity Test. Designed to measure skill in directed arm movements as required in many craft jobs. Examinees are required to guide their pencils through long narrow paths without touching the boundary lines. A composite score is computed on the basis of speed and accuracy. This test was a direct copy of the ID Manual Dexterity Test.
7. Numerical Quantity Test. Developed by the PRD to measure computational ability. Examinees are required to identify squares containing the greatest number of dots or the least number of dots.

Since most of the conscripts had little or no experience in taking tests of any kind, the battery was preceded by a preliminary exercise, How to Mark, to train conscripts to make a mark representing an answer to each item on a set of practice problems. The tests were then administered, item by item, the administrator naming each element and asking the questions orally. During test administration, subjects were continuously monitored to assure that they were following instructions and marking responses to each item. Repeated experience in administering the test battery indicated that an optimum ratio of monitors to examinees was about 1 to 15. It was also essential to provide intensive training to monitors and to check their performance at intervals, as failure on the part of the monitors was immediately manifest in examinee performance.

Special Problems. In addition to basic considerations of test content, there were also a number of other potential problem areas which had to be given special attention:

Language. There are six major languages and hundreds of dialects in Iran; consequently, test control could not include reference to language or geographic area. Taped administrations were considered necessary for the major non-Farsi speaking groups.

Malingering. The test administration procedure was kept as simple as possible, providing a means for identifying and minimizing malingering in the event it became a critical problem when the tests were put into operational use.

Security. Because of potential security problems in transportation and storage of tests, test content was restricted to illustrations and the actual questions were in a separate booklet. These question booklets were produced in limited number and assigned a military classification.

Utilization. The tests in their final form had to be designed to have general validity, to be easy to produce and distribute, and to be usable in groups ranging in size from 2 to 200. The test battery had to be economically and administratively feasible. General specifications were for a final battery which could be administered in approximately 2 hours, whose scoring and reporting requirements could be satisfied within 24 hours, and which would require minimum training of administration and scoring teams.

. Test Development and Evaluation. The test development procedure consisted of three phases: a small scale tryout, field testing, and standardization. In phase one, the complete battery of seven tests was administered to a sample of 25 illiterate Farsi-speaking ordinary conscripts from the Supreme Commander's Staff (SCS) headquarters company. The purpose of the first tryout was to test the procedure, identify administrative problems, and obtain approximate administration times for each test and for the entire battery. The first tryout was completed in January 1968.

In phase two, conducted between January and March 1968, the complete battery was administered to a sample of 200 illiterate Farsi-speaking ordinary conscripts at the Bagheshah Garrison in Tehran. The subjects had completed approximately two months of basic military training. As a result of this tryout, two tests were eliminated from the battery. The Manual Dexterity Test (#6) was eliminated as a result of difficulties incurred in administering and scoring; the Numerical Quantity Test (#7) was eliminated because item difficulty was considered to be too low. Concurrent with the second tryout, an effort was initiated to develop a realistic criterion to validate the tests. Measures were obtained in eight aspects of performance expected to reflect Satisfactoriness for Service during basic training--marching drill, personal discipline, personal appearance, maintenance of equipment, mechanical dexterity, standing drill, motor coordination, and arms drill. On the basis of this tryout, tests and administration procedures were further refined.

The revised tests and criterion measurement procedure were prepared and a second and larger tryout was scheduled for February. The Ordinary Conscript Battery (OCB) was administered to over 800 conscripts from five different training centers during the first week following their induction, and the criterion measures were obtained after completion of approximately 8 weeks of basic military training.

The results of this second tryout were mixed. The tests were found to be generally high in reliability for each of the five centers and for the sample as a whole (Table 1), but marked inconsistency was noted across the five centers on mean test scores, mean criterion scores, and validity--probably due to group differences, differential effectiveness of training at the five centers, and variations in administration procedures, which occurred despite the preparation of detailed procedures and extensive training of the research teams.<sup>2</sup>

Generally, all the tests except the Matches Test showed some degree of validity in predicting performance in use of rifle, field and rifle drill, and individual drill (Table 2); none of the tests were suitable as predictors of performance in rifle assembly. Two of the tests, Oral Comprehension and Tool Relations, were probably too easy; and one other, Figure Completion, was somewhat difficult. In general, the Ordinary Conscript Battery showed some utility as a mass screening method, as against the purely random selection which had been the practice before. Initial tentative operational use of the OCB occurred in July 1968 at the time of the first conscription under the new law.

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<sup>2</sup> Erich Prien. Final Report: Technical Assistance to Military Selection and Classification in Iran, AIR, July 1969, Page 24.

## SELECTION OF LITERATE ORDINARY CONSCRIPTS

The Conscription Law enacted in 1968 provided for filling military quotas by selective induction on three levels: first, from literate conscripts (those with fourth grade education and above); second, from illiterates having experience in selected civilian occupations; and finally, from the balance of inexperienced illiterates (selected on the basis of the OCB test scores). Thus, the battery for literate conscripts was intended as an instrument for objective classification, rather than for selection.

Three of the tests developed for illiterate conscripts--the Tool Relations Test, the Figure Similarities Test, and the Figure Completion Test--were retained in the Literate Conscript battery. Three additional tests were constructed--Arithmetic Reasoning, Verbal Comprehension, and Word Meaning.

Experimental forms of the three new tests were administered to 100 newly recruited NCOs at the Mehrabad Garrison on 14 March 1968; criterion measures were obtained concurrently using the "Satisfactoriness for Service" measurement procedure. Because the educational level of this sample (9 to 11 years) was substantially above the population for which the test was ultimately intended (4 years and up), this tryout was considered provisional.

Minor adjustments were made in both test content and administration procedures prior to the second experimental tryout, which was conducted in August 1968 at four IIGF Replacement Training Centers. A total of 775 conscripts were tested and scheduled for criterion measurement during the last week of the basic training period. The results of the second administration of the literate conscript battery are not impressive (Table 3).

Of the tests taken from the OCB, only 1 of 24 had a validity coefficient significant at the .05 level, and the score distribution means and average proportion of solutions were all quite high. These three tests are obviously too easy for the literate conscript population. For the three new tests in the battery, all the significant coefficients were negative. These findings raised the possibility that the training fails to motivate these more highly educated conscripts. On the basis of the experimental tryout, the utility value of these tests for purposes of classification was indeed suspect.

Table 1  
**SPLIT-HALF RELIABILITY COEFFICIENTS\* (UNCORRECTED) FOR TESTS OF THE  
 ORDINARY CONSCRIPT BATTERY (OCB)**

Test	Samples				Adjab-shir	Average
	Tehran 2nd	Kerman	Birjand	Khoram- abad		
1. Oral Comprehension	87	89	75	81	81	83
2. Figure Similarities (1st 30 items)	83	75	77	70	71	75
3. Figure Similarities (2nd 30 items)	76	71	62	73	65	69
4. Figure Completion	84	81	74	76	79	79
5. Tool Relations	86	85	84	77	88	84
6. Matches Test	75	80	65	72	74	73
N =	166	200	200	100	200	

\* Decimal points omitted.

Table 2  
PREDICTIVE VALIDITY<sup>a</sup> OF ORDINARY CONSCRIPT BATTERY (OCB)  
TOTAL OF 5 CENTERS (N = 728)

Test	Criterion Measures						Level of Difficulty
	Target Score	Rifle Assembly	Personal Performance <sup>b</sup>	Use of Rifle	Field & Rifle Drill	Individual Drill	
1. Oral Comprehension	.06 <sup>a</sup>	.03	-.06	<u>.15</u>	<u>.14</u>	<u>.17</u>	30      22.8      5.12      .760
2. Figure Similarities (1st 30 Items)	<u>.11</u>	-.01	.00	.05	<u>.14</u>	<u>.12</u>	30      17.6      5.40      .587
3. Figure Similarities (2nd 30 Items)	<u>.12</u>	.00	-.02	.09	<u>.15</u>	<u>.14</u>	30      16.4      5.53      .547
4. Figure Completion	.02	.00	-.05	<u>.10</u>	<u>.13</u>	<u>.14</u>	20      10.3      5.32      .515
5. Tool Relations	<u>.10</u>	.00	-.01	<u>.13</u>	<u>.15</u>	<u>.17</u>	30      20.8      5.75      .693
6. Matches Test	<u>.11</u>	<u>.12</u>	-.02	<u>.04</u>	<u>.06</u>	<u>.06</u>	20      10.8      4.42      .540

<sup>a</sup>Coefficients significant at the .01 level—two-tailed test—have been underlined.

<sup>b</sup>Decimal points omitted.

(From: Erich Prien, Final Report: Technical Assistance to Military Selection and Classification in Iran, AIR, July 1969, Table 9, Page 31.)

Table 3

PREDICTIVE VALIDITY\* OF LITERATE CONSCRIPT BATTERY TESTS  
 COMPOSITE SAMPLE: FOUR IIGF RTCS  
 (N = 775)

Test	Criterion Measures						No. Items	Mean	S.D.	Difficulty Level
	Commer- datation	Punish- ment	Target Score	Rifle Assembly	Rifle Drill	Field Drill				
1. Figure Similarities (1st 30 Items)	<u>.06</u> <sup>b</sup>	<u>-.03</u>	<u>.05</u>	<u>-.02</u>	<u>.06</u>	<u>.04</u>	30	25.92	4.38	.864
2. Figure Similarities (2nd 30 Items)	<u>-.01</u>	<u>.04</u>	<u>-.08</u>	<u>-.09</u>	<u>-.07</u>	<u>-.04</u>	30	24.51	5.17	.817
3. Tool Relations	<u>.04</u>	<u>.05</u>	<u>-.01</u>	<u>-.01</u>	<u>.03</u>	<u>.03</u>	30	25.92	5.12	.864
4. Figure Completion	<u>.05</u>	<u>.03</u>	<u>.00</u>	<u>-.12</u>	<u>.02</u>	<u>.03</u>	20	16.55	4.08	.828
5. Arithmetic (1-33)	<u>.09</u>	<u>-.06</u>	<u>.03</u>	<u>.03</u>	<u>.04</u>	<u>.05</u>	33	15.86	6.21	.481
6. Arithmetic (34-66)	<u>.01</u>	<u>-.01</u>	<u>.08</u>	<u>-.01</u>	<u>.09</u>	<u>.02</u>	33	13.33	7.45	.404
7. Verbal Comprehension (1-40)	<u>-.02</u>	<u>.07</u>	<u>-.19</u>	<u>-.07</u>	<u>-.14</u>	<u>-.10</u>	40	17.09	7.11	.427
8. Verbal Comprehension (41-80)	<u>-.05</u>	<u>-.03</u>	<u>-.02</u>	<u>-.01</u>	<u>-.01</u>	<u>.02</u>	40	5.24	4.01	.141
9. Word Meaning (1-50)	<u>-.07</u>	<u>.11</u>	<u>-.34</u>	<u>-.09</u>	<u>-.25</u>	<u>-.15</u>	50	20.69	8.86	.414
10. Word Meaning (51-100)	<u>-.07</u>	<u>.09</u>	<u>-.30</u>	<u>-.02</u>	<u>-.13</u>	<u>-.15</u>	50	13.12	8.37	.262

\*Coefficients significant at the .01 level—two-tailed test—have been underlined.

<sup>b</sup> Decimal points omitted.

## SELECTION AND CLASSIFICATION OF NCOs

The research program concerning NCO volunteers and career personnel was given second priority. The number of NCO applicants continues to be less than required by the IIA; thus, a selection decision is not as pressing at the present time. The problem of NCO classification into Military Occupational Specialties is, however, a pressing concern.

The basic problem was to develop an omnibus battery of tests of proven utility for measuring a spectrum of aptitude areas. A head start had been provided by recent activities of the PRD: In 1966, a battery of 14 tests had been administered to approximately 1000 NCO applicants. A follow-up study was initiated to retrieve both test and criterion data reflecting training performance. The first field data, when analyzed by BESRL in Washington, yielded disappointing results; an attempt to rescore the tests themselves and recompute validity coefficients was terminated when it was discovered that basic test data had been destroyed.

The research strategy was then changed to focus attention on critical occupational groups. Four occupations were selected for study:

Vehicle Drivers (N = 672)  
Medical Aide (N = 111)  
Signal and Communications (N = 126)  
Clerk-Typist (N = 64)

The research procedure specified test administration at the time of induction with successive follow-up to collect training and job proficiency criteria. The new procedure thus involved longitudinal rather than concurrent validation.

The tests were selected from the ID series and from PRD files on the basis of aptitudes required for successful job performance. Tests administered to the four occupational groups are shown below.

Test	Sample Group			
	Drivers N = 672	Medical 111	Signal 126	Clerk 64
Mechanical Information (ID-7)	x		x	
Figure Similarities (OCB)	x		x	
Coding (ID-12)			x	x
Table Reading (ID-15)				x
Marking (ID-21)		x	x	
Verbal Analogies	x	x		x
Arithmetic Reasoning				x
Word Meaning	x			
Oral Comprehension	x			

A sequential validation procedure was employed using training grades, advanced training proficiency, and job proficiency measures. The follow-up of samples tested was seriously handicapped by both incomplete and incorrect records of personnel assignments, transfers, and locations within an assignment area. As a result, only 67% of the sample was finally recovered. Test data were correlated with NCO training course grades and with the "Satisfactoriness for Service" criterion. The results are shown in Tables 4 through 7. While the correlation coefficients indicate only marginal predictive value for purposes of classification, the tests could be of general utility if and when the IIA shifts to a policy of screening NCO applicants.

Selection of Military Academy Cadets. The Military Academy had previously constructed a battery of achievement tests, although the validity of these tests had not been demonstrated. Test content and format placed heavy emphasis on memorization of factual material typically contained in the secondary school curriculum.

In order to increase the scope of the test battery, two of the ID series were adapted--Scientific Information (ID-17) and World Information (ID-16). In addition, an adaptation of an officer qualification test was included in the experimental battery.

Criterion composites were derived from three clusters of course grades: theoretical, practical, and military courses. In addition, records provided data regarding personal performance relevant to military officer performance requirements; commendations, punishments, and commander ratings were included. The results of this preliminary validation indicated a generally positive relationship with academic grades, correlations ranging from .00 to .40.<sup>3</sup> The tests were implemented in the selection of cadets in 1968. The selection battery was intended for use with a minimum composite score as a requirement for admission.

#### DEVELOPMENT OF RESEARCH CAPABILITY IN THE IIA PERSONNEL RESEARCH DIVISION

At the commencement of technical advisement, the IIA Personnel Research Division and subsidiary psychometric sections in the three services had been in operation for nearly five years. Approximately 100 paper-and-pencil tests had been constructed, but none had been validated, nor had any other psychological research projects been initiated. This delay was due in part to the pressure of constant demands for testing service by military commanders and agencies.

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<sup>3</sup> Erich Prien. Final Report. Technical Assistance to Military Selection and Classification in Iran, AIR, July 1969, Page 50.

Table 4  
VALIDITY OF MEDICAL NCO BATTERY  
USING ADVANCED TRAINING COURSE GRADES  
(N = 111)

Test	Criterion Measures											Sigma
	(3) Physiology	(4) Military Hygiene	(5) Bandage	(6) Nursing	(7) Evacuation	(8) First Aid	(9) Of Casualties	(10) English	(11) General	(12) Medicine		
Verbal Analogies (1)	.48	.11	-.16	.34	.34	.23	-.16	.23	.09	.28	32.90	10.02
Marking (I.D-21) (2)	-.04	.03	.01	.08	.15	.04	.10	.20	.12	.00	19.68	5.52

(From: Erich Prien. Final Report: Technical Assistance to Military Selection and Classification in Iran, A.R., July 1969, Table 12, Page 41)

Table 5

VALIDITY OF SIGNAL AND COMMUNICATIONS NCO BATTERY  
USING ADVANCED TRAINING COURSE GRADES  
(N = 126)

Test	Criterion Measures										Mean	Sigma
	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(19)	(20)			
Coding (ID-12)	.09	.09	.13	.18	.16	.09	.08	.08	.04	12.15	1.95	
Marking (ID-21)	.07	.19	.06	.08	.26	.09	.17	.02	.01	25.51	4.65	
Mechanical Information (ID-7)	.08	.16	.09	.09	.32	.11	.20	.04	.02	40.03	4.78	
Figure Similarities (OCB)	-.02	-.09	.03	.17	.14	.06	.19	.03	-.06	50.45	7.74	

(From: Erich Pries. Final Report: Technical Assistance  
to Military Selection and Classification in Iran, AIR,  
July 1969, Table 14, P. 43)

Table 6  
 VALIDITY OF CLERK-TYPIST NCO BATTERY  
 USING ADVANCED TRAINING COURSE GRADES  
 (N = 64)

Test	Criterion Measures							Mean	Sigma
	(5) File Recording	(6) Army Reports	(7) Computer	(8) AGS Staffs, Functions	(9) AG Functions & Hemograph Machine	(10) Farsi Typewriter			
Coding (ID-12) (1)	.41	.08	-.20	.16	.09	.47		10.99	2.24
Table Reading (ID-15) (2)	.41	.37	.15	.12	.13	.53		36.88	10.49
Verbal Analogies (3)	.57	.55	.02	-.06	.41	.15		41.75	10.26
Arithmetic Reasoning (4)	.52	.30	-.11	-.20	-.04	.18		35.85	19.39

(From: Erich Prien. Final Report: Technical Assistance  
 to Military Selection and Classification in Iran, AIR,  
 July 1969, Table 13, P. 42)

Table 7

PREDICTIVE VALIDITY OF NCO TESTS  
USING SATISFACTORINNESS FOR SERVICE CRITERION  
(N = 250)

Test	Criterion Measures							Mean	Sigma
	(1)	(2)	(3)	(4)	(5)	(6)	(7)		
Figure Similarities (1st 30 items)	(8)	.04	.15	0	-.16	.03	0	.02	17.05
Figure Similarities (2nd 30 items)	(9)	-.06	.21	0	-.13	-.02	-.10	-.08	13.80
Oral Comprehension	(10)	-.02	-.03	0	.04	-.06	-.04	-.07	28.94
Arithmetic Reasoning Part I	(11)	.06	.11	0	-.17	.10	0	.07	14.91
Arithmetic Reasoning Part II	(12)	.02	.02	0	-.03	.17	-.09	.05	4.47
Verbal Comprehension Part I	(13)	.11	-.04	0	-.09	.15	.01	.10	4.54
Verbal Comprehension Part II	(14)	.10	.01	0	-.03	.11	0	.07	8.28
Word Meaning Part I	(15)	.08	-.08	0	-.06	.07	-.02	.03	15.96
Word Meaning Part II	(16)	.07	.09	0	-.10	.10	-.05	.03	8.28
Mechanic Aptitude Part I	(17)	.05	.01	0	-.10	.15	-.01	.11	17.23
Mechanic Aptitude Part II	(18)	.04	.03	0	-.09	.12	-.01	.07	4.22

## RESTRUCTURING THE ORGANIZATION

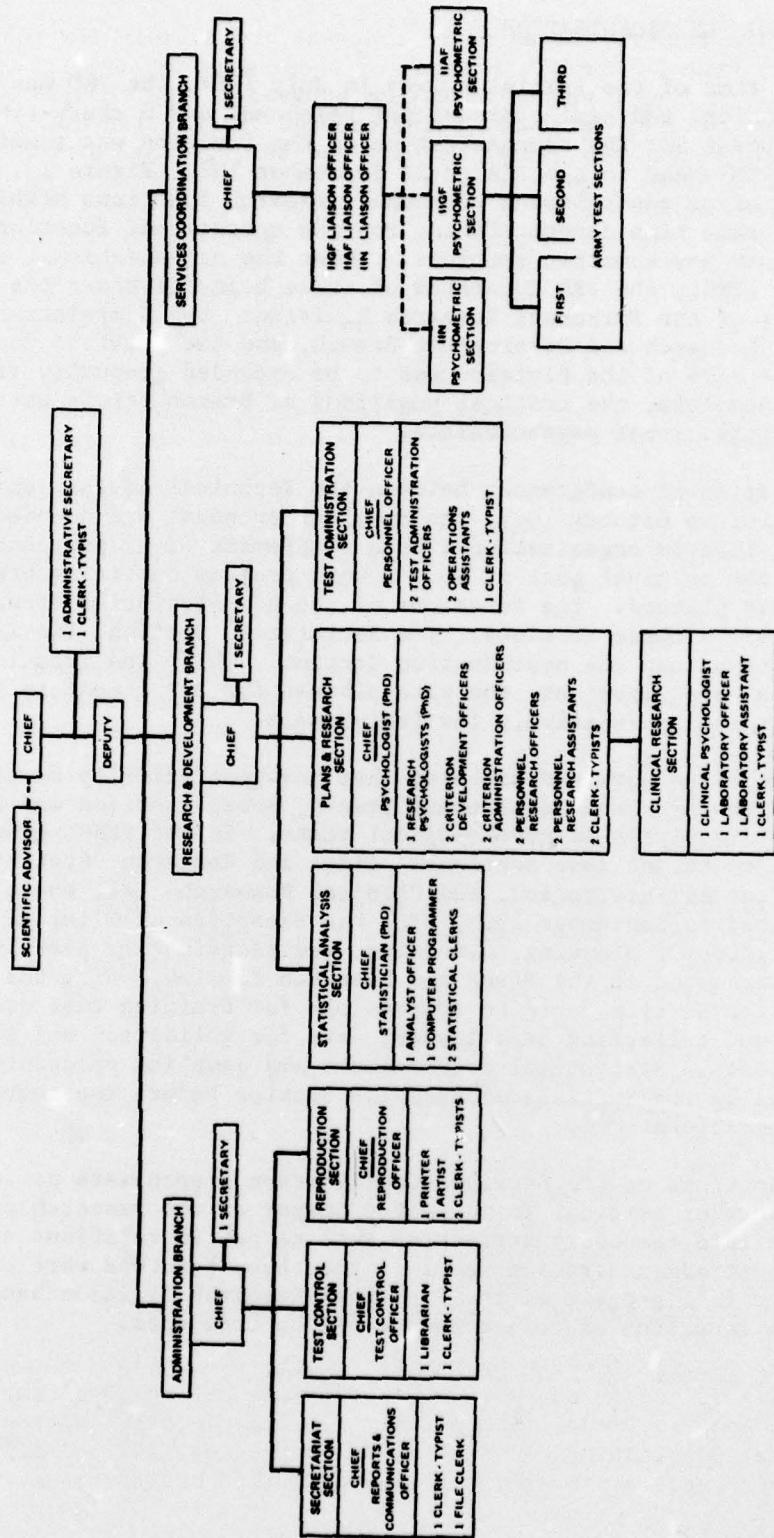
At the time of the initial survey in July 1967, the PRD was staffed with 11 technical and semi-professional personnel and 6 clerk-typists. A BESRL proposal for the reorganization of the Division was submitted through ARMISH--MAAG to the IIA on 11 September 1967 (Figure 1). The proposal aimed at centralizing personnel research functions within the PRD, at the same time decentralizing routine operational functions to the subsidiary psychometric sections. Under the organizational structure proposed by BESRL, the PRD consisted of three branches under the Office of the Chief of the Personnel Research Division: the Administrative Branch, the Research and Development Branch, and the Services Coordination Branch. The size of the Division was to be expanded gradually from 17 to 49. If possible, the critical positions of Branch Chiefs were to be filled by professional psychologists.

In a series of conferences between the Technical Adviser and the Division Chief in October 1967, the original proposal was amended to call for an interim organization with a complement of 28 personnel, instead of the original goal of 49. A work program outlining branch functions was planned. The functions of the Administrative Branch were to be handled by three sections: The Secretariat Section, The Test Control Section, and The Reproduction Section. While the functions of this section were important, the work planned for the immediate future could be handled by relatively few individuals.

The projected workload dictated that heaviest priority be given to manning the Research and Development Branch, whose function was the construction and analysis of psychological tests. In the BESRL proposal this branch contained four sections: Plans and Research, Statistical Analysis, Test Administration, and Clinical Research. All these sections were activated in September 1967, with the exception of Clinical Research. The key function of planning, directing, and coordinating personnel research was vested in the Plans and Research Section, while the Test Administration Section would be responsible for training test administration teams and collecting experimental data for validation and standardization of tests. Statistical requirements and sampling procedures would be specified by the Statistical Analysis Section before the tests were put into operational use.

The functions of the Services Coordination Branch were not considered necessary or critical in the early stages of the research program, although certain temporary activities such as public relations and coordination of test administration teams in the three services were carried out. As the full program of the Personnel Research Division became implemented, the functions of this branch would be broadened.

PERSONNEL, RESEARCH AND TESTING DIVISION OF THE ADVERTISING GENERAL'S OFFICE //



**Figure 1.** Revised organization structure of IIA Personnel Research Division proposed by BESRL, Sept 1987.

During the term of the advisory contract, relatively few additions were actually made in the PRD, and most of these were replacements for individuals assigned to advanced education programs. The changes were more of an internal nature, personnel being grouped in the branches according to functions. Previously, staff members had been grouped according to research problem areas, performing all the tasks associated with a particular problem from initial test construction through operational utilization of tests. The new organization facilitated management control since responsibility and accountability for specific projects were clearly defined. The new structure also provided opportunity for each individual to limit his effort to a narrower area, encouraging the development of specialized expertise.

In the interest of consistency of operation, draft material for a manual of Standing Operating Procedures was prepared and submitted to the Division Chief and the appropriate section chiefs for their review in the spring of 1968. The SOP Manual provided statements of organization and branch goals and functions on which individual position descriptions and policy and procedure statements were based. Quality control was insured by the specification of standards and detailed checking procedures in all phases of a research program from initial planning to reporting of final results. A supplementary manual was also prepared detailing technical operations and subsidiary functions relating to test development, criterion development, and test implementation. Training and orientation in the use of the Manual was provided in individual and group conferences with members of the Division staff.

#### TRAINING

Three training programs for the research and management staff were instituted based on recommendations made by the Technical Adviser in the first three months of the project: 1) a management training program, 2) an in-service training program for the research staff, and 3) an advanced education program for selected staff members. The first two training programs, initiated in December 1967 to enhance the capability of the Division staff to support the test development research programmed in the course of technical advisement, were directed to specific problems in the overall research program. The advanced education program was instituted to insure that the critical positions of Branch Chiefs would be filled by highly trained personnel, thus contributing to the development of a self-sufficient organization following conclusion of technical advisement. In addition to these three training programs, a technical library was established within the Supreme Commander's Staff in 1968 to meet general training requirements for the Division staff.

Training Program for the Management Staff. Training sessions for the management staff, including Section Chiefs, were initiated in December 1967 to improve communication and coordination within the organization. The sessions stressed planning, scheduling of activities, and coordination of the sections as required by the Division's revised organizational structure.

At first, sessions were held every other day; later, they were reduced to twice per week, and finally once a week toward the end of the technical advisement period. Special sessions were scheduled as problems arose in the course of the research program. Throughout the period, emphasis was placed on the simplification and structuring of work procedures and responsibilities outlined in the SOP Manual. Production control was achieved to some degree by preparation of a master project schedule to be maintained by the Deputy Division Chief and reviewed each week with the Section Chiefs. The general training needs of the division as a whole were taken into consideration by the distribution of technical education material and memoranda to all staff members.

As key supervisory personnel were assigned to the Advanced Education Program, their replacements were given a general orientation on the functions and research activities performed by the Division. A comprehensive orientation was arranged for the new Division Chief, Colonel Kashef, who replaced Colonel Danesteh in August 1968. This orientation included a ten-day tour in November 1968 to observe personnel research and large-scale testing operations at the West African Examination Council in Lagos and the East African Examination Council in Nairobi.

In-service Training for the Research Staff. Commencing in December 1967, seminars were scheduled on a formal regular basis on specific subjects pertinent to the test development program. They were supplemented with technical education material and technical memoranda which were placed on general distribution to the research staff. Because the research schedule and routine military duties of the staff came to interfere with the seminar schedule, the program was terminated in July 1968, except as informally conducted by request. Training was subsequently scheduled informally and conducted on an individual basis in conjunction with the research program. Efforts to stimulate guided self-study proved only marginally effective because of the difficulty in obtaining the recommended reference materials in Farsi translations that would be more easily absorbed than in English.

To the extent possible, special short-term courses and exercises were included in the training program. In September 1968, two officers completed a two-month course in test development given by the Test Development and Research Office of the West African Examination Council. In November 1968, two others completed a two-month course in Experimental Methods given at the Combat Research and Evaluation Organization IIGF, by the Research Triangle Institute. Supervised field experience was provided by the numerous data collection trips made to various IIA military installations in the course of the research program.

Advanced Education Program. The Advanced Education Program was established as a long-range approach to the problem of developing the research capability of the Personnel Research Division. A proposal for advanced education of selected IIA officers in British or American universities for periods from one to three years was approved by the Government of Iran in the spring of 1968, and the sum of \$210,000 was allocated for implementation. Assignment of individuals was to be consistent with individual capabilities, current and projected needs of the

organization, and the individual's status in the IIA. Full financial sponsorship was provided. To insure that the IIA would reap the benefits of its investment in higher education, individuals selected were encouraged to complete the program and return to service within a reasonable period of time. Similar financial support was to be provided for in-country higher education in the form of tuition stipends and direct expenses.

Nine individuals, eight from the staff of the PRD and one from the IIAF Psychometric Section, were selected for the initial Advanced Education group. Seven of these were seeking their PhD degree and the other two were seeking their MA. By the end of the summer, seven officers had been enrolled in institutions in the United States, and the remaining two were to be enrolled in 1970. At this writing, four officers have completed their graduate studies; the others are expected to finish at various dates before June 1973. A proposal for extension of the program through the decade 1970-1980 was submitted by the Adjutant General in November 1968.

#### DEVELOPING OPERATIONAL TESTING SUPPORT

The initial review of IIA personnel research and testing activities indicated that research projects were frequently combined with testing operations, thus delaying the research program. Therefore, the reorganization plan outlined specific policy statements requiring not only completion of research on selection and classification procedures prior to operational use, but discouraging the assignment of operational testing responsibilities to the Division. The successful implementation of this policy required development of an operational capability in each of the three services.

The required organization did exist in each military service, although effectiveness was considerably below necessary standards. The tests, little more than printed forms, were used before the appropriate development and validation had been completed. In certain instances, civilian consultants were employed who deviated significantly from technical standards of competence promulgated by the International Association of Applied Psychology.

The capability for operational testing which existed in the Ground Forces Psychometric Section in early 1968 would have been sufficient if adequately staffed. However, because of shortages of qualified officers in different training centers, this section was disbanded. The loss was not immediately felt since the selection testing program for conscripts was not initiated in the summer of 1968 as originally planned. Reorganization of the section was, however, considered essential for both short-range implementation of tests and long-range development of the indigenous research capability. The SCS Five-Year Plan was revised to include a proposal for the development of a multi-purpose organization in each service to conduct operational selection and classification testing and to develop MOS proficiency tests to insure quality control of career NCOs. The latter function was placed in each service organization to permit each service to maintain a measure of control over its personnel operations.

A number of support research projects were conducted by the PRD during technical advisement. These projects were designed to provide information regarding population characteristics, cultural and situational variables, and their relationship to psychological measurement activities.

Retest Reliability of the OCB for Illiterates. Reliability of the OCB for illiterates was based on an odd-even item split. Stability over time was satisfactory, although the several studies indicated changes in test score distribution means associated with interpolated training.

Effects of Test Administration Procedures on Test Performance and Validity. The objective of this study was to relate various test administration procedures to test score distributions and test validity. One study examined the effect of page-by-page administration, requiring a certain amount of self-pacing on the part of examinees, as against item-by-item administration. The experiment involved 300 ordinary conscripts at two different training centers. Results showed that item-by-item administration brought a significantly higher average score.

A second study investigated the effect of increasing item administration time from 10 to 15 seconds. Two hundred conscripts were randomly selected from two different training centers, and each group was split for the 10- and 15-second administration. The results confirmed that 10-second administration time is quite adequate.

Effects of Training on OCB Test Performance. A series of studies was undertaken to investigate the effects of various in-service training on test score distributions. In the first study, two groups of 100 illiterate ordinary conscripts were obtained from one training center at the time of induction. Group A took the OCB at that time ( $A_1$ ) and at a second time ( $A_2$ ) two months later, following completion of Farsi training. Group B was tested only after completion of Farsi training ( $B_2$ ). Comparison of  $A_1/A_2$  showed significant increases in distribution means for four out of five tests; but comparison of  $A_1/B_2$  showed no such increase. The increases shown for  $A_1/A_2$  were therefore attributed to the impact of test-taking experience rather than to literacy training.

A second project was designed to examine the effects of basic military training on test performance. Basic military training includes regimentation, organized group activities, familiarization with mechanical devices, and specific training with tools and weapons. For many conscripts this experience is their first exposure to 20th century technology, and for nearly all it is the most comprehensive and systematic training ever received. The assumption was that this would represent a significant increment in total life learning for the ordinary conscript, and would thus manifest itself in OCB test performance. A group C was selected and tested at the end of basic training. Comparison with groups A and B showed higher mean scores on three out of five tests.

In summary, test taking experience and basic military training were shown to have substantial effect on OCB test performance. Farsi training did not affect test performance, a finding which demonstrates that efforts to insure the fairness of the OCB for illiterates of varying language backgrounds were successful.

Relation of Civilian Occupational Experience and OCB Test Performance. A survey of civilian occupations of ordinary conscripts was conducted. Occupations were studied and clusters derived reflecting both skill level and subjectively judged aptitude requirements. The occupational classification code was then used to sort groups which had been administered the OCB at induction. When completed, this study was expected to yield a hierarchy of occupations in terms of test performance.

Military Occupational Studies. Classification of IIA personnel is based on branch requirements and quotas. Assignments within a branch are not systematic, and occupations tend to be essentially the same from branch to branch. A comprehensive survey of both conscript and NCO occupations was conducted in early 1969 using available IIA records. Position descriptions were prepared and verified by observation. These provided the basis for subjectively determined occupational aptitude requirements. It was hoped that branch classification would ultimately be replaced by occupational area classification. (Both project 4 and project 5 were incomplete at the end of technical advisement.)

An extensive public relations and promotion effort was recommended to preclude misunderstanding and resistance to implementation of research products. The program specified that a complete briefing of the activities of the PRD be conducted at least once a month, that all research operations involving field personnel be preceded by a short briefing, and that technical research reports suitable for general distribution be prepared to provide visibility of PRD activities. Four such reports were printed and distributed during technical advisement.

#### CONCLUSIONS

The two principal objectives of the technical advisement program in Iran were: 1) the design and introduction of a selection and classification system for the Imperial Iranian Armed Forces, and 2) the development of an indigenous self-sustaining research capability in the Personnel Research Division. To what extent were each of these objectives accomplished? To what extent can the accomplishments be generalized for use in similar projects in other cultures?

Within a relatively short period of time, four different batteries of tests were adapted for use in Iran. The tests proved to be fair for the intended populations and showed basic utility as instruments for initial selection of large groups, identifying individuals of marginal ability who would tend to be ineffective in military service. The tests are therefore more efficient than chance selection, which had been employed by the IIA previous to the period of technical advisement (Table 8). As instruments for differential classification into Military Occupational Specialties, however, the tests were less successful, in large part because of characteristics of the military manpower input (conscripts with no specialized experience) and the overall military personnel system (little differentiation between occupations, quota system of filling manpower requirements). The results suggest that the tests constructed during technical advisement would be best employed

Table 8

**COMPARISON OF MEANS AND STANDARD DEVIATIONS  
OF TESTS CONSTRUCTED DURING TECHNICAL  
ADVISEMENT IN IRAN**

Test	Illiterate Conscripts			Literate Conscripts			NCO's	
	Mean	Sigma	Mean	Sigma	Mean	Sigma	Mean	Sigma
1. Figure Similarities—Part I	19.6	5.40	25.9	4.38	17.1	6.64		
2. Figure Similarities—Part II	16.4	5.53	24.5	5.17	13.8	6.33		
3. Oral Comprehension	22.8	5.12			28.9	2.36		
4. Figure Completion	10.3	5.32	16.5	4.08				
5. Tool Relations	20.8	5.15	25.9	5.12				
6. Verbal Comprehension—Part I			17.1	7.11	15.96	6.33		
7. Verbal Comprehension—Part II			5.2	4.01	8.3	4.27		
8. Word Meaning—Part I			20.7	8.86	17.0	5.56		
9. Word Meaning—Part II			13.1	8.37	7.04	4.13		
10. Arithmetic Reasoning—Part I			15.9	6.21	14.9	6.05		
11. Arithmetic Reasoning—Part II			13.3	7.45	4.47	4.54		

within a transitional personnel system based on general selection. Meanwhile, the quota system could be reformed and research on differential classification continued. Thus, continuous refinement and modification of the test batteries and specific occupation performance studies will be ongoing concerns of the PRD, while a comprehensive approach to manpower resources utilization should be worked out through increased coordination of the services at the Supreme Staff level.

The AIR tests adapted from those used in Africa showed only marginal validity against criteria developed in Iran, confirming a finding four years earlier by BESRL scientists in Korea that chances are slight that a common core selection and classification battery can be developed which will be applicable to all cultures.<sup>4</sup> While the basic research needs for developing selection and classification testing systems for the military are much the same in all cultures--knowledge is required of the general educational level, the level of technological development, the nature of the social system, religion and basic values, ethnic groupings and language structure, the general economy, and the military structure and mission--the relative importance of the elements may vary drastically from one culture to another. Entirely different sets of values or criteria may be employed from culture to culture in assigning men to specific military occupations or in evaluating effective performance. Such nuances can only be learned by intensive study of the particular culture in which the system is to be utilized, and special effort should be made to consult with native scholars during the study, since even the most expert and understanding foreigner makes his judgments within a different system of reference.

The Iran project nevertheless did provide some clues to an effective general framework in which testing research can be carried out. The experience alerted BESRL scientists to a number of logistical problems which are certain to be encountered in similar projects in other cultures, among them incomplete personnel records, difficulty in training test administration teams, lack of printing and data processing facilities, and reluctance to implement research products.

In the second primary objective, the development of an indigenous research capability in the Personnel Research Division, accomplishments were rather more marked and are of more long-term importance. A revised organizational structure was designed, and gradual implementation was under way at the conclusion of technical advisement. A Manual of Standing Operating Procedures outlining mission and rationalizing normal day-to-day activities was adopted with a great deal of success. Advanced educational training has been provided for a number of key indigenous personnel, and the planned expansion of the program for the decade 1970-1980 should increase the pool of qualified psychometricians for assignment to military personnel research. Detailed plans for subsidiary

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<sup>4</sup> Leo J. Kotula. Research for Selection and Classification in the Korean Army, U. S. Army Behavior and Systems Research Laboratory. Research Study 65-5. August 1965.

operational organizations in each of the three services could relieve the PRD of the burden of providing field testing service and free it instead to conduct the necessary developmental research. The introduction of detailed research action plans and the field experience gained by PRD personnel in the support research projects during the course of technical advisement will also contribute to the strength of the PRD research capability. This capability will, of course, face challenges from a number of different sources in the years to come. The investigators who conducted the technical advisement project warn against possible tendencies to reduce support of the research organization or to divert its manpower resources to other purposes, or to distribute its functions elsewhere in the military structure. The greatest challenge which the Personnel Research Division will face is that of producing meaningful research products which have practical utility for specifically defined military and societal goals. Great effort will have to be expended to adapt tests and research projects to changing conditions as the armed forces themselves continue to modernize and to be an instrument of the modernization of Iranian society as a whole.

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